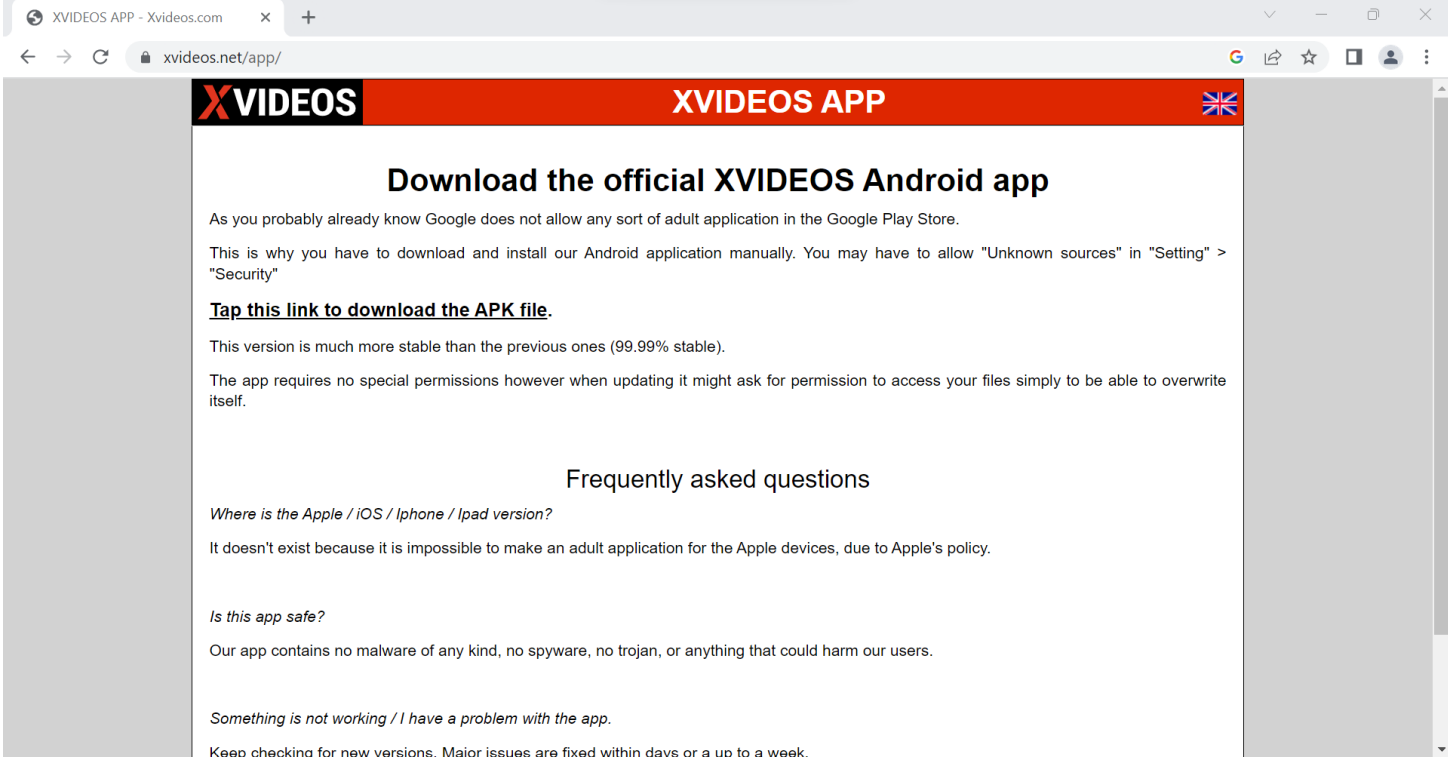# EXHIBIT H

U.S. Patent No. 11,677,798 to XVideos

The following claim chart shows exemplary aspects of the XVideos streaming services and products ("XVideos") that infringe claim 1 of the '798 Patent. The chart is exemplary and should not be read to limit DISH's assertions against any Defendant, WebGroup Czech Republic, a.s. ("WGCZ"), or XVideos as to the services or products described below. The chart should not be read to limit DISH's assertions to the patent claim charted below. Nor should the chart below be read to limit how any Defendant, WGCZ, or XVideos infringes the claim below.

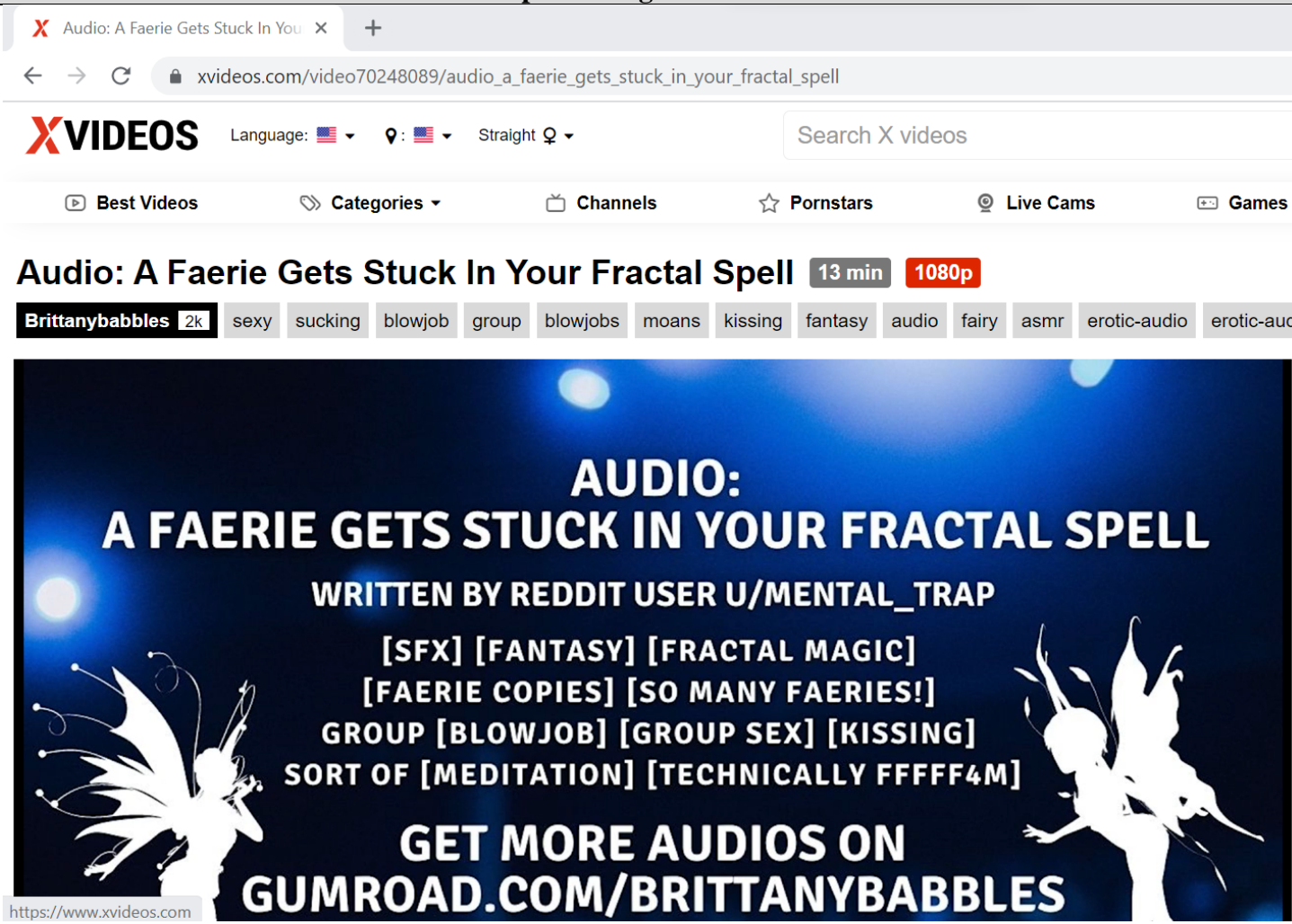| Claim Element	Example Infringement Evidence
[1.pre] A system for adaptive-rate content streaming of digital content playable on one or more end user stations over the internet, the system comprising:	XVideos is software, website, and/or a web player that permits an end user content player device to stream a video over a network from a server for playback of the video. XVideos is a website executable by devices that obtains streams of a selected video program for playback. The streams, which may include streams from a live event video, are obtained from the video servers connecting to XVideos over a network. According to the XVideos website, XVideos is also an Application executable by devices running Android operating systems. *See* https://www.xvideos.com/app.

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	The screenshots in this chart of the XVideos are from the XVideos website running on a web browser on a personal computer. In addition, XVideos is available to run on other content player devices, including, for example: gaming devices (such as the Xbox One), personal mobile phones or tablets (such as the Apple iPhone, iPad, or Android devices), Smart TVs, and other streaming devices. The bottom of the XVideos website explains that XVideos converts videos to various formats and stores them on XVideos' indexes:

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	XVideos.com is a **free hosting service for porn videos**. We convert your files to various formats. You can grab our 'embed code' to display any video on another website. Every video uploaded, is shown on our indexes more or less three days after uploading. About 1200 to 2000 adult videos are uploaded each day (note that gay and shemale videos are filtered from this page, but shown in their respective categories). Our pages (everything that you see hosted on www.xvideos.com) contain absolutely no spyware/adware/trojan/etc. There is no charge (no hidden charges either) for viewing our videos. *XVIDEOS* is rated with RTA label. Parents, you can easily block access to this site. Please read this page for more informations. Make money with XVIDEOS - Become a porn model - Terms of service - Privacy policy - Upload Your Videos - Content removal - Advertising - RSS Deletes - XVideos Android App - Privacy notice - More... XVideos.com - the best free porn videos on internet, 100% free. https://www.xvideos.com/ Below is a screenshot of a landing page for a video on XVideos:

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	  As described in greater detail below, the XVideos Server(s) interact with the XVideos website to execute a method for multi-bitrate video and/or audio content streaming.

4

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	While the screenshots and other data presented are from the XVideos website accessed via a Google Chrome Browser, based upon information and belief, other XVideos products and services operate similarly across browsing platforms. With respect to adaptively receiving the digital stream from the video server over the network, XVideos's adaptive bitrate streams are provided to the XVideos site from a server over a network using the HTTP Live Streaming ("HLS") adaptive bitrate streaming protocol. HLS is "a protocol for transferring unbounded streams of multimedia data." Request for Comments: 8216 – HTTP Live Streaming, August 2017 ("RFC 8216") at 1. Using HLS, "a client can receive a continuous stream of media from a server for concurrent presentation." RFC 8216 at 4. HLS "allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality." RFC 8216 at 4. With HLS, "[c]lients should switch between different Variant Streams to adapt to network conditions." RFC 8216 at 5. When the XVideos website accesses a selected program, the site requests and receives a playlist file from the XVideos Server(s) that shows the available versions of the program at different resolutions. For example, a user navigates the website and chooses the video shown above as the selected video program. Thus, devices running XVideos are content player devices that stream a video over a network from a server for playback of the video. XVideos obtains streams of a selected video program for playback. The streams are obtained from the video servers connecting to XVideos over a network.
[1.1] at least one storage device storing digital content,	When the XVideos website accesses a selected program, the site requests and receives a playlist file from the XVideos Server(s) hosting available versions of the program at different resolutions stored thereon. For example, a user navigates the website and chooses the video shown above as the selected video program. In the instant test, a Google Chrome browser accessing the XVideos website makes a HTTPS GET request to **cdn77-vid.xvideos-cdn.com** for a master playlist named **"/PUp5Xy8Gz8ospRfPv6rYhA==,1685999463/videos/hls/cb/4c/db/cb4cdba181aa08cea3eda6b0bde06a3d/hls.m3u8**." As shown in the excerpts of the master playlist file shown below, the video available is encoded at 5 different bitrates. <table><tr><td>#EXTM3U</td></tr></table>

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=763904,RESOLUTION=854x480,NAME="480p" hls-480p-fd687.m3u8 #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1327104,RESOLUTION=1280x720,NAME="720p" hls-720p-07621.m3u8 #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=2760704,RESOLUTION=1920x1080,NAME="1080p" hls-1080p-3c615.m3u8 #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=423936,RESOLUTION=640x360,NAME="360p" hls-360p-92dee.m3u8 #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=155648,RESOLUTION=444x250,NAME="250p" hls-250p-def68.m3u8 URL: https://cdn77-vid.xvideos-cdn.com/PUp5Xy8Gz8ospRfPv6rYhA==,1685999463/videos/hls/cb/4c/db/cb4cdba181aa08cea3eda6b0bde06a3d/hls.m3u8 The manifest shows five versions of the stream at the following bandwidths: • 763904 (referred to herein as "**763904 Bandwidth**") having a resolution of 854x480, or 480p • 1327104 (referred to herein as "**1327104 Bandwidth**") having a resolution of 1280x720, or 720p • 2760704 (referred to herein as "**2760704 Bandwidth**") having a resolution of 1920x1080, or 1080p

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence

	• 423936 (referred to herein as "**423936 Bandwidth**") having a resolution of 640x360, or 360p
	 • 155648 (referred to herein as "**155648 Bandwidth**") having a resolution of 444x250, or 250p.
	
	 For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:
	
	 <table><tr><th>Bandwidth</th><th>Token</th></tr><tr><td>763904 Bandwidth</td><td>/hls-480p-fd687.m3u8</td></tr><tr><td>1327104 Bandwidth</td><td>/hls-720p-07621.m3u8</td></tr><tr><td>2760704 Bandwidth</td><td>/hls-1080p-3c615.m3u8</td></tr><tr><td>432936 Bandwidth</td><td>/hls-360p-92dee.m3u8</td></tr><tr><td>155648 Bandwidth</td><td>/hls-250p-def68.m3u8</td></tr></table>
	 XVideos uses HTTPS GET requests to retrieve the segments of the encoded video specified in the file above.
	
	 The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. *See* RFC 8216 at 38 ("The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played."); *see also* RFC 8216 at 4 ("A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist."); RFC 8216 at 4 ("A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.").
	
	 As shown in the test data, XVideos initially selects the **2760704 Bandwidth** version of the stream and makes a request for the corresponding playlist. The XVideos Server(s) returns the file with the following contents:
	
	 <pre>#EXTM3U
	
	#EXT-X-VERSION:3
	
	#EXT-X-TARGETDURATION:10</pre>

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	#EXT-X-MEDIA-SEQUENCE:0	
	#EXTINF:10.010011,	
	hls-1080p-3c6150.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6151.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6152.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6153.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6154.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c6155.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6156.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6157.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6158.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6159.ts	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	#EXTINF:10.010011,	
	hls-1080p-3c61510.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61511.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61512.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61513.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61514.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61515.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61516.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61517.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61518.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61519.ts	
	#EXTINF:10.010011,	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	hls-1080p-3c61520.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61521.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61522.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61523.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61524.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61525.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61526.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61527.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61528.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61529.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61530.ts	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	#EXTINF:10.010011, hls-1080p-3c61531.ts #EXTINF:10.010011, hls-1080p-3c61532.ts #EXTINF:10.010011, hls-1080p-3c61533.ts #EXTINF:10.010011, hls-1080p-3c61534.ts #EXTINF:10.010000, hls-1080p-3c61535.ts #EXTINF:10.010011, hls-1080p-3c61536.ts #EXTINF:10.010011, hls-1080p-3c61537.ts #EXTINF:10.010011, hls-1080p-3c61538.ts #EXTINF:10.010011, hls-1080p-3c61539.ts #EXTINF:10.010011, hls-1080p-3c61540.ts #EXTINF:10.010011,	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	hls-1080p-3c61541.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61542.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61543.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61544.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61545.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61546.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61547.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61548.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61549.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61550.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61551.ts	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	#EXTINF:10.010011,	
	hls-1080p-3c61552.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61553.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61554.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61555.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61556.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61557.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61558.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61559.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61560.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61561.ts	
	#EXTINF:10.010011,	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	hls-1080p-3c61562.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61563.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61564.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61565.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61566.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61567.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61568.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61569.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61570.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61571.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61572.ts	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	#EXTINF:10.010011, hls-1080p-3c61573.ts #EXTINF:10.010011, hls-1080p-3c61574.ts #EXTINF:10.010000, hls-1080p-3c61575.ts #EXTINF:10.010011, hls-1080p-3c61576.ts #EXTINF:10.010011, hls-1080p-3c61577.ts #EXTINF:10.010011, hls-1080p-3c61578.ts #EXTINF:10.010011, hls-1080p-3c61579.ts #EXTINF:10.010011, hls-1080p-3c61580.ts #EXTINF:0.767433, hls-1080p-3c61581.ts #EXT-X-ENDLIST

As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with "#EXTINF" specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, XVideos uses HTTPS GET requests to request and retrieve the segments of the

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	encoded live stream specified in the file above. The video files are located at **https://cdn77.vid.xvideos-cdn.com**, and each segment (except the final segment of the list) is 10.010011 seconds long. The received playlist includes video segments, such as: "**hls-1080p-3c6150.ts**," "**hls-1080p-3c6151.ts**," "**hls-1080p-3c6152.ts**," "**hls-1080p-3c6153.ts**," "**hls-1080p-3c61580.ts**," and "**hls1080p-3c61581.ts**." As explained above, the identifier token for the **2760704 Bandwidth** is "**hls-1080p-3c615.m3u8**." In the test video, there are 81 .ts streamlet files at each bandwidth, each corresponding to segmented moments in the video. Each of the streamlets (and the variant playlists within which the streamlets are kept) is stored on the XVideos server(s). Thus, devices running XVideos are content player devices that stream a video over a network from a server for playback of the video. XVideos obtains streams of a selected video program for playback. The streams are obtained from the video servers hosting said videos.
[1.2] the digital content encoded at a plurality of different bit rates creating a plurality of streams including a first bit rate stream, a second bit rate stream, and a third bit rate stream, wherein the first bit rate stream, the second bit rate stream, and the third bit rate stream each comprise a group of streamlets	According to the HLS protocol, Master Playlist files identify a "plurality of groups of streamlets," which are referred to as Variant Streams in the context of HLS. RFC 8216 at 5 ("A Master Playlist provides a set of Variant Streams, each of which describes a different version of the same content."); *see also* RFC 8216 at 6 ("A Variant Stream includes a Media Playlist that specifies media encoded at a particular bit rate, in a particular format, and at a particular resolution for media containing video."); RFC 8216 at 42 ("A server MAY offer multiple Media Playlist files to provide different encodings of the same presentation. If it does so, it SHOULD provide a Master Playlist file that lists each Variant Stream to allow clients to switch between encodings dynamically."); RFC 8216 at 43 ("The server MUST meet the following constraints when producing Variant Streams in order to allow clients to switch between them seamlessly … Each Variant Stream MUST present the same content."). As shown below, the Master Playlist for the video provides a Uniform Resource Identifier ("URI") identifying where the Media Playlist for each of the multiple Variant Streams is "stored on the video server." The one or more servers accessible by the XVideos web player store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions. The one or more servers stores variant playlists hosting a plurality of streams of the video program. Each of the stored streams comprises a plurality of streamlets at the same resolution, and the variant playlists are organized to ensure the sequential playback of the streams at a resolution supported by the available network bandwidth.

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
encoded at a respective one of the plurality of different bit rates, each group of streamlets comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;	The numerous streams of the video program accessible by the XVideos web player include a low quality stream, a medium quality stream, and a high quality stream. For example, in the instant test of a video titled "Audio: A Faerie Gets Stuck in Your Fractal Spell," the web player made an HTTP GET request to **cdn77-vid.xvideos-cdn.com** for a master playlist named "**/PUp5Xy8Gz8ospRfPv6rYhA==,1685999463/videos/hls/cb/4c/db/cb4cdba181aa08cea3eda6b0bde06a3d/hls.m3u8**." As shown in the excerpts of the master playlist file shown below, the video available is encoded at 5 different bitrates. ```#EXTM3U` `#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=763904,RESOLUTION=854x480,NAME="480p"` `hls-480p-fd687.m3u8` `#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1327104,RESOLUTION=1280x720,NAME="720p"` `hls-720p-07621.m3u8` `#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=2760704,RESOLUTION=1920x1080,NAME="1080p"` `hls-1080p-3c615.m3u8` `#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=423936,RESOLUTION=640x360,NAME="360p"` `hls-360p-92dee.m3u8` `#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=155648,RESOLUTION=444x250,NAME="250p"` `hls-250p-def68.m3u8```

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	URL: https://cdn77-vid.xvideos-cdn.com/PUp5Xy8Gz8ospRfPv6rYhA==,1685999463/videos/hls/cb/4c/db/cb4cdba181aa08cea3eda6b0bde06a3d/hls.m3u8 The manifest shows five versions of the stream at the following bandwidths: 763904 (referred to herein as "**763904 Bandwidth**") having a resolution of 854x480, or 480p 1327104 (referred to herein as "**1327104 Bandwidth**") having a resolution of 1280x720, or 720p 2760704 (referred to herein as "**2760704 Bandwidth**") having a resolution of 1920x1080, or 1080p 423936 (referred to herein as "**423936 Bandwidth**") having a resolution of 640x360, or 360p 155648 (referred to herein as "**155648 Bandwidth**") having a resolution of 444x250, or 250p. For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example: <table><tr><td>Bandwidth</td><td>Token</td></tr><tr><td>763904 Bandwidth</td><td>/hls-480p-fd687.m3u8</td></tr><tr><td>1327104 Bandwidth</td><td>/hls-720p-07621.m3u8</td></tr><tr><td>2760704 Bandwidth</td><td>/hls-1080p-3c615.m3u8</td></tr><tr><td>432936 Bandwidth</td><td>/hls-360p-92dee.m3u8</td></tr><tr><td>155648 Bandwidth</td><td>/hls-250p-def68.m3u8</td></tr></table> XVideos uses HTTPS GET requests to retrieve the segments of the encoded video specified in the file above. The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. *See* RFC 8216 at 38 ("The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played."); *see also* RFC 8216 at 4 ("A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist."); RFC 8216 at 4 ("A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.").

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	As shown in the test data, XVideos initially selects the **2760704 Bandwidth** version of the stream and makes a request for the corresponding playlist. The XVideos Server(s) returns the file with the following contents: #EXTM3U #EXT-X-VERSION:3 #EXT-X-TARGETDURATION:10 #EXT-X-MEDIA-SEQUENCE:0 #EXTINF:10.010011, hls-1080p-3c6150.ts #EXTINF:10.010011, hls-1080p-3c6151.ts #EXTINF:10.010011, hls-1080p-3c6152.ts #EXTINF:10.010011, hls-1080p-3c6153.ts #EXTINF:10.010011, hls-1080p-3c6154.ts #EXTINF:10.010000, hls-1080p-3c6155.ts #EXTINF:10.010011, hls-1080p-3c6156.ts #EXTINF:10.010011,

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	hls-1080p-3c6157.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6158.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c6159.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61510.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61511.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61512.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61513.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61514.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61515.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61516.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61517.ts	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	#EXTINF:10.010011,	
	hls-1080p-3c61518.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61519.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61520.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61521.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61522.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61523.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61524.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61525.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61526.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61527.ts	
	#EXTINF:10.010011,	

21

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	hls-1080p-3c61528.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61529.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61530.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61531.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61532.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61533.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61534.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61535.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61536.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61537.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61538.ts	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	#EXTINF:10.010011,	
	hls-1080p-3c61539.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61540.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61541.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61542.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61543.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61544.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61545.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61546.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61547.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61548.ts	
	#EXTINF:10.010011,	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	hls-1080p-3c61549.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61550.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61551.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61552.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61553.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61554.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61555.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61556.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61557.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61558.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61559.ts	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	#EXTINF:10.010011,	
	hls-1080p-3c61560.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61561.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61562.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61563.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61564.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61565.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61566.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61567.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61568.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61569.ts	
	#EXTINF:10.010011,	

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence	
	hls-1080p-3c61570.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61571.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61572.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61573.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61574.ts	
	#EXTINF:10.010000,	
	hls-1080p-3c61575.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61576.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61577.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61578.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61579.ts	
	#EXTINF:10.010011,	
	hls-1080p-3c61580.ts	

U.S. Patent No. 11,677,798 to XVideos

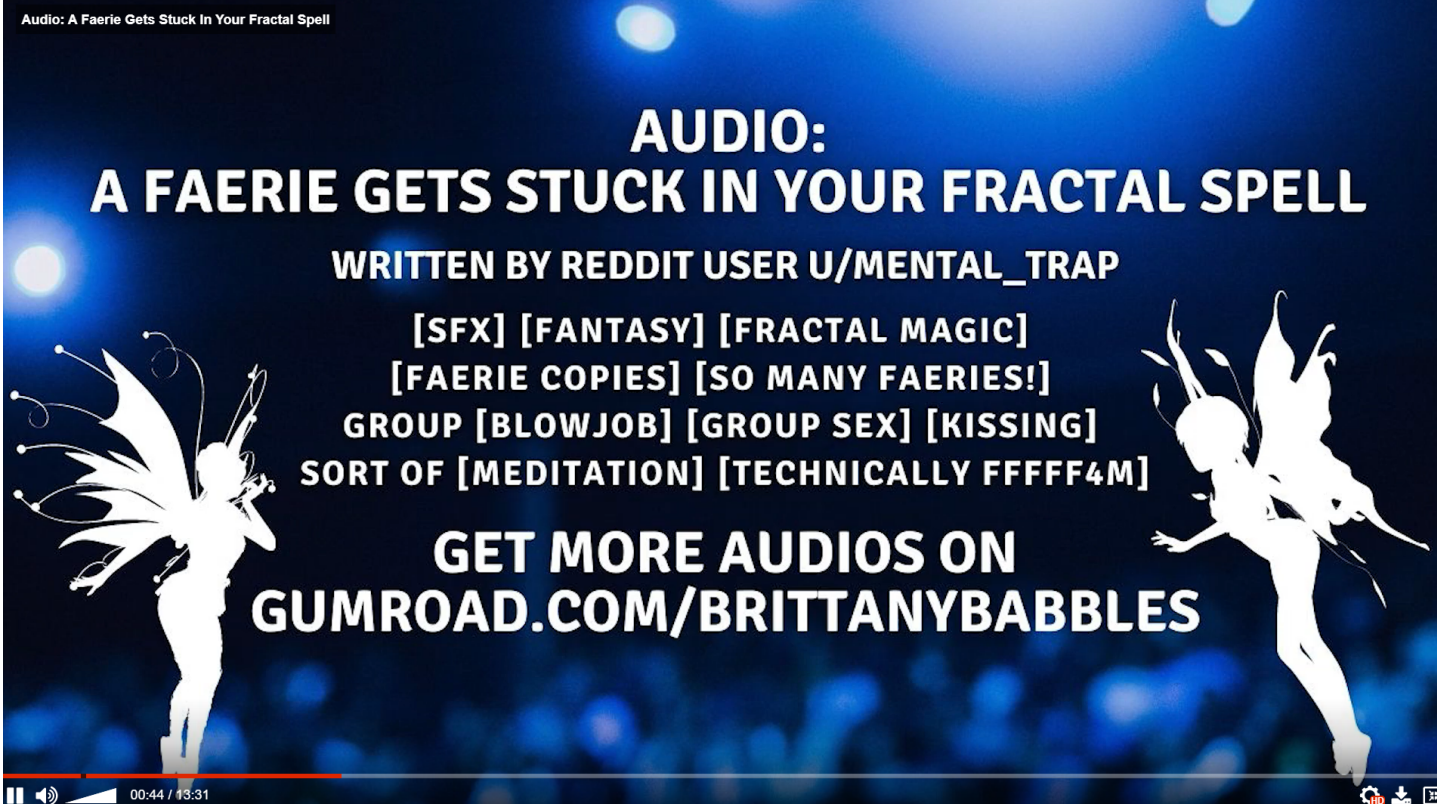| Claim Element	Example Infringement Evidence
	#EXTINF:0.767433, hls-1080p-3c61581.ts #EXT-X-ENDLIST As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with "#EXTINF" specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, XVideos uses HTTPS GET requests to request and retrieve the segments of the encoded live stream specified in the file above. The video files are located at **https://cdn77.vid.xvideos-cdn.com**, and each segment (except the final segment of the list) is 10.010011 seconds long. The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams "describes a different version of the same content." RFC 8216 at 5. Thus, each of the Variant Streams are "encodings of the same presentation" at different bitrates. RFC 8216 at 42. Indeed, to allow "clients to switch between" Variant Streams seamlessly, HLS requires that "[e]ach Variant Stream MUST present the same content" on playback. RFC 8216 at 43. <table><tr><td>**Bandwidth Version**</td><td>**.ts file/timestamp**</td></tr><tr><td>**2760704 Bandwidth**</td><td>#EXTM3U #EXT-X-VERSION:3 #EXT-X-TARGETDURATION:10 #EXT-X-MEDIA-SEQUENCE:0 #EXTINF:10.010011, hls-1080p-3c6150.ts #EXTINF:10.010011, hls-1080p-3c6151.ts</td></tr></table>

U.S. Patent No. 11,677,798 to XVideos

Claim Element		Example Infringement Evidence
		#EXTINF:10.010011,
		hls-1080p-3c6152.ts
		#EXTINF:10.010011,
		hls-1080p-3c6153.ts
		[…]
		#EXTINF:10.010011,
		hls-1080p-3c61580.ts
		#EXTINF:0.767433,
		hls-1080p-3c61581.ts
		#EXT-X-ENDLIST
	763904 Bandwidth	#EXTM3U
		#EXT-X-VERSION:3
		#EXT-X-TARGETDURATION:10
		#EXT-X-MEDIA-SEQUENCE:0
		#EXTINF:10.010011,
		hls-480p-fd6870.ts
		#EXTINF:10.010011,
		hls-480p-fd6871.ts
		#EXTINF:10.010011,
		hls-480p-fd6872.ts
		#EXTINF:10.010011,

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	hls-480p-fd6873.ts […] #EXTINF:10.010011, hls-480p-fd68780.ts #EXTINF:0.767433, hls-480p-fd68781.ts #EXT-X-ENDLIST

Each variant playlist listed above includes at least two streamlets (e.g., a first and second streamlet). A comparison of the variant playlists above (the **2760704 Bandwidth** and the **763904 Bandwidth**) shows that both playlists include streamlets with these file names: "[TOKEN]1.ts" and "[TOKEN]2.ts" Similarly, there are the same number of streamlets in each of the playlists, and each playlist streamlet is the same duration of time as the corresponding streamlet of the other playlist. Upon information and belief, playlists for the other three variants also include these streamlets, which correspond to the same portion of the video provided on-demand from XVideos's Server(s).

The received playlist includes video segments, such as: "**hls-1080p-3c6150.ts**," "**hls-1080p-3c6151.ts**," "**hls-1080p-3c6152.ts**," "**hls-1080p-3c6153.ts**," "**hls-1080p-3c61580.ts**," and "**hls1080p-3c61581.ts**." As explained above, the identifier token for the **2760704 Bandwidth** is "**hls-1080p-3c615.m3u8**." In the test video, there are 81 .ts streamlet files at each bandwidth, each corresponding to segmented moments in the video.

As long as the viewer stays on the channel and the bandwidth is adequate to support the chosen resolution, XVideos will continue to request and receive playlists corresponding to the current, chosen resolution (in this case the **2760704 Bandwidth** version, shown below):

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
[1.4] wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and	At least one of the low, medium, and high-quality streams of XVideos's video is encoded at a bit rate of no less than 600 kbps. The master playlist shows five versions of the stream at the following bandwidths: • 763904 (referred to herein as "**763904 Bandwidth**") having a resolution of 854x480, or 480p • 1327104 (referred to herein as "**1327104 Bandwidth**") having a resolution of 1280x720, or 720p • 2760704 (referred to herein as "**2760704 Bandwidth**") having a resolution of 1920x1080, or 1080p • 423936 (referred to herein as "**423936 Bandwidth**") having a resolution of 640x360, or 360p • 155648 (referred to herein as "**155648 Bandwidth**") having a resolution of 444x250, or 250p.

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
[1.5] wherein the first streamlet of each of the groups of streamlets has the same first duration and encodes the same first temporal portion of the digital content in each of the first bit rate stream, the second bit rate stream, and the third bit rate stream,	For the XVideos video, the streamlet encoding the same portion of the video in the low quality stream has an equal playback duration as the streamlet encoding the same portion of the video in the medium quality and high quality streams. This includes the first streamlet of each of the bandwidth versions. Each of the Variant Streams "describes a different version of the same content." RFC 8216 at 5. Thus, each of the Variant Streams are "encodings of the same presentation" at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow "clients to switch between" Variant Streams seamlessly, HLS requires that "[e]ach Variant Stream MUST present the same content" on playback. RFC 8216 at 43. Further, HLS provides that "[m]atching content in Variant Streams MUST have matching timestamps" to allow XVideos to synchronize the media. RFC 8216 at 43. And, "[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions." RFC 8216 at 39. Thus, "[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers." RFC 8216 at 43. As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with "#EXTINF" specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, XVideos uses HTTPS GET requests to request and retrieve the segments of the encoded live stream specified in the file above. The video files are located at **https://cdn77.vid.xvideos-cdn.com**, and each segment (except the final segment of the list) is 10.010011 seconds long. The received playlist includes video segments, such as: "**hls-1080p-3c6150.ts**," "**hls-1080p-3c6151.ts**," "**hls-1080p-3c6152.ts**," "**hls-1080p-3c6153.ts**," "**hls-1080p-3c61580.ts**," and "**hls1080p-3c61581.ts**." As explained above, the identifier token for the **2760704 Bandwidth** is "**hls-1080p-3c615.m3u8**." In the test video, there are 81 .ts streamlet files at each bandwidth, each corresponding to segmented moments in the video. <table><tr><td>**Bandwidth Version**</td><td>File line (**#EXTINF: length**) (<u>same portion of live stream</u>)</td></tr><tr><td>**2760704 Bandwidth**</td><td>**#EXTINF:10.010011,**</td></tr></table>

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	hls-1080p-3c615<u>0</u>.ts **#EXTINF:10.010011**, hls-1080p-3c615<u>1</u>.ts **#EXTINF:10.010011**, hls-1080p-3c615<u>2</u>.ts
1327104 Bandwidth	**#EXTINF:10.010011**, hls-720p-07621<u>0</u>.ts **#EXTINF:10.010011**, hls-720p-07621<u>1</u>.ts **#EXTINF:10.010011**, hls-720p-07621<u>2</u>.ts
155648 Bandwidth	**#EXTINF:10.010011**, hls-250p-def68<u>0</u>.ts **#EXTINF:10.010011**, hls-250p-def68<u>1</u>.ts **#EXTINF:10.010011**, hls-250p-def68<u>2</u>.ts

As provided above, HLS requires that "[m]atching content in Variant Streams MUST have matching timestamps" to allow XVideos to synchronize the media. RFC 8216 at 43; *see also* RFC 8216 at 43 ("Matching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.").

The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are "in relation to the beginning of the video." For example, HLS requires that "[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted." RFC 8216 at 6; *see also* RFC 8216 at 45 ("A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”). Indeed, to adapt playback between different bitrate Variant Streams, XVideos “can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.
[1.6] and wherein the first streamlet of the first bit rate stream encodes the same first temporal portion of the digital content at a different bit rate than the first streamlet of the second bit rate stream and the first streamlet of the third bit rate stream.	For the XVideos video, the streamlet encoding the same portion of the video in the low quality stream has an equal playback duration as the streamlet encoding the same portion of the video in the medium quality and high quality streams. This includes the first streamlet of each of the bandwidth versions. Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow XVideos to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43. As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, XVideos uses HTTPS GET requests to request and retrieve the segments of the encoded live stream specified in the file above. The video files are located at **https://cdn77.vid.xvideos-cdn.com**, and each segment (except the final segment of the list) is 10.010011 seconds long. The received playlist includes video segments, such as: “**hls-1080p-3c6150.ts**,” “**hls-1080p-3c6151.ts**,” “**hls-1080p-3c6152.ts**,” “**hls-1080p-3c6153.ts**,” “**hls-1080p-3c61580.ts**,” and “**hls1080p-3c61581.ts**.” As explained above, the identifier token for the **2760704 Bandwidth** is “**hls-1080p-3c615.m3u8**.” In the test

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	video, there are 81 .ts streamlet files at each bandwidth, each corresponding to segmented moments in the video.

Bandwidth Version	File line (**#EXTINF: length**) (same portion of live stream)
2760704 Bandwidth	**#EXTINF:10.010011**, hls-1080p-3c6150.ts **#EXTINF:10.010011**, hls-1080p-3c6151.ts **#EXTINF:10.010011**, hls-1080p-3c6152.ts
1327104 Bandwidth	**#EXTINF:10.010011**, hls-720p-076210.ts **#EXTINF:10.010011**, hls-720p-076211.ts **#EXTINF:10.010011**, hls-720p-076212.ts
155648 Bandwidth	**#EXTINF:10.010011**, hls-250p-def680.ts **#EXTINF:10.010011**, hls-250p-def681.ts **#EXTINF:10.010011**, hls-250p-def682.ts

As provided above, HLS requires that "[m]atching content in Variant Streams MUST have matching timestamps" to allow XVideos to synchronize the media. RFC 8216 at 43; *see also* RFC 8216 at 43 ("Matching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.").

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are "in relation to the beginning of the video." For example, HLS requires that "[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted." RFC 8216 at 6; *see also* RFC 8216 at 45 ("A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments."). Indeed, to adapt playback between different bitrate Variant Streams, XVideos "can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely." RFC 8216 at 47. As provided above, HLS requires that "[m]atching content in Variant Streams MUST have matching timestamps" to allow XVideos to synchronize the media. RFC 8216 at 43; *see also* RFC 8216 at 43 ("Matching content in Variant Streams MUST have matching Discontinuity Sequence Numbers."). The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are "in relation to the beginning of the video." For example, HLS requires that "[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted." RFC 8216 at 6; *see also* RFC 8216 at 45 ("A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments."). Indeed, to adapt playback between different bitrate Variant Streams, XVideos "can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media

U.S. Patent No. 11,677,798 to XVideos

Claim Element	Example Infringement Evidence
	from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely." RFC 8216 at 47.